

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P32626A/JDU/BOU	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/GB2004/001398	International filing date (day/month/year) 29/03/2004	(Earliest) Priority Date (day/month/year) 27/03/2003
Applicant ROWETT RESEARCH INSTITUTE		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 7 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☒ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☒ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 13

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

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International application No.

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☒ in written format
 - ☒ in computer readable form
 - c. time of filing/furnishing
 - ☐ contained in the international application as filed
 - ☐ filed together with the international application in computer readable form
 - ☒ furnished subsequently to this Authority for the purpose of search
2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N1/20 C12R1/01 A61K35/74

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C12R A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, EMBASE, PAJ, WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BOURRIAUD C ET AL.: "Butyrate production from lactate by human colonic microflora" REPROD NUTR DEV, vol. 42, 2002, page S55, XP009035389 cited in the application abstract	1-5, 10-22
X	GIBSON G R ET AL: "OCCURRENCE OF SULFATE-REDUCING BACTERIA IN HUMAN FECES AND THE RELATIONSHIP OF DISSIMILATORY SULFATE REDUCTION TO METHANOGENESIS IN THE LARGE GUT" JOURNAL OF APPLIED BACTERIOLOGY, vol. 65, no. 2, 1988, pages 103-112, XP009035388 ISSN: 0021-8847 the whole document table 1	1-5, 10-22

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

25 August 2004

Date of mailing of the international search report

07/09/2004

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Petri, B

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>HOLD GEORGINA L ET AL: "Assessment of microbial diversity in human colonic samples by 16S rDNA sequence analysis" FEMS MICROBIOLOGY ECOLOGY, vol. 39, no. 1, January 2002 (2002-01), pages 33-39, XP002293314 ISSN: 0168-6496 cited in the application the whole document table 1 & DATABASE EMBL "clone HuCA15" retrieved from EBI Database accession no. AJ408968 abstract & DATABASE EMBL "clone HuCB26" retrieved from EBI Database accession no. AJ409000 abstract & DATABASE EMBL "isolate HuCC15" retrieved from EBI Database accession no. AJ315482 abstract & DATABASE EMBL "clone HuCA20" retrieved from EBI Database accession no. AJ408972 abstract</p>	9-22
X	<p>-----</p> <p>BARCENILLA A ET AL: "Phylogenetic relationships of butyrate-producing bacteria from the human gut." APPLIED AND ENVIRONMENTAL MICROBIOLOGY. APR 2000, vol. 66, no. 4, April 2000 (2000-04), pages 1654-1661, XP002293315 ISSN: 0099-2240 cited in the application the whole document table 4 & DATABASE EMBL "Butyrate-producing bacterium L2-7" retrieved from EBI Database accession no. AJ270490 abstract</p>	9-22
X	<p>-----</p> <p>ZOETENDAL E G ET AL: "Temperature gradient gel electrophoresis analysis of 16S rRNA from human fecal samples reveals stable and host-specific communities of active bacteria." APPLIED AND ENVIRONMENTAL MICROBIOLOGY. OCT 1998, vol. 64, no. 10, October 1998 (1998-10), pages 3854-3859, XP002909919 ISSN: 0099-2240 the whole document</p> <p style="text-align: center;">-/--</p>	9-22

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>& DATABASE EMBL "bacterium A07" retrieved from EBI Database accession no. AF052409 abstract</p> <p>-----</p> <p>LESER THOMAS D ET AL: "Culture-independent analysis of gut bacteria: the pig gastrointestinal tract microbiota revisited." APPLIED AND ENVIRONMENTAL MICROBIOLOGY. FEB 2002, vol. 68, no. 2, February 2002 (2002-02), pages 673-690, XP002293316 ISSN: 0099-2240 the whole document & DATABASE EMBL "clone p-2001-s959-5" retrieved from EBI Database accession no. AF371658 abstract & DATABASE EMBL "clone p-2566-9F5" retrieved from EBI Database accession no. AF371660 abstract & DATABASE EMBL "clone p-197-o5" retrieved from EBI Database accession no. AF371659 abstract</p>	9-22
X	<p>-----</p> <p>ZHU XIANG Y ET AL: "16S rRNA-based analysis of microbiota from the cecum of broiler chickens." APPLIED AND ENVIRONMENTAL MICROBIOLOGY. JAN 2002, vol. 68, no. 1, January 2002 (2002-01), pages 124-137, XP002293317 ISSN: 0099-2240 the whole document & DATABASE EMBL "bacterium cknem327-B6-72" retrieved from EBI Database accession no. AF376231 abstract</p>	9-22
X	<p>-----</p> <p>SUAU A ET AL: "Direct analysis of genes encoding 16S rRNA from complex communities reveals many novel molecular species within the human gut." APPLIED AND ENVIRONMENTAL MICROBIOLOGY. NOV 1999, vol. 65, no. 11, November 1999 (1999-11), pages 4799-4807, XP002293318 ISSN: 0099-2240 cited in the application the whole document figures 1-5</p> <p>-/--</p>	9-22

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	<p>& DATABASE EMBL "bacterium adhufec25" retrieved from EBI Database accession no. AF132254 abstract</p> <p>-----</p> <p>LOUIS PETRA ET AL: "Restricted distribution of the butyrate kinase pathway among butyrate-producing bacteria from the human colon." JOURNAL OF BACTERIOLOGY. APR 2004, vol. 186, no. 7, April 2004 (2004-04), pages 2099-2106, XP009035429 ISSN: 0021-9193 the whole document table 1</p> <p>& DATABASE EMBL "Butyrate-producing bacterium GM2/1" retrieved from EBI Database accession no. AY305315 abstract</p> <p>& DATABASE EMBL "Butyrate-producing bacterium SS3/4" retrieved from EBI Database accession no. AY305316 abstract</p> <p>& DATABASE EMBL "Butyrate-producing bacterium SL6/1/1" retrieved from EBI Database accession no. AY305317 abstract</p> <p>& DATABASE EMBL "Butyrate-producing bacterium SM6/1" retrieved from EBI Database accession no. AY305318 abstract</p> <p>& DATABASE EMBL "butyrate-producing bacterium SS2/1" retrieved from EBI Database accession no. AY305319 abstract</p> <p>& DATABASE EMBL "Butyrate-producing bacterium SSC/2" retrieved from EBI Database accession no. AY305320 abstract</p> <p>-----</p>	9-22